

# Notice of Allowability

Application No.

10/630,125

Examiner

David A Reifsnyder

Applicant(s)

ROMANYSZYN, MICHAEL T.

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to communication filed on July 30, 2003.
2. ☒ The allowed claim(s) is/are 13-23 and 42-44 (renumbered claims 1-4, 6, 7, 5, 11, 8-10 and 12-14, respectively).
3. ☒ The drawings filed on 30 July 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

#### ***In The Claims***

*NOTE: The USPTO prepared a complete marked up copy of the claims because the applicant failed to follow the Revised Amendment Practice which became mandatory on July 30, 2003. However, the USPTO's complete marked up copy of the claims had errors. The following Examiner's Amendment corrects the errors in the USPTO's complete marked up copy of the claims.*

Claims 1-12 (canceled)

Claim 13. (currently amended): A vortex nozzle, comprising: a nozzle body including a passageway therethrough and a port that inlets a fluid flow into the passageway, whereby the port is substantially tangential and normal to the passageway; and an end cap attached to the nozzle body.

Claim 14. (original): The vortex nozzle according to claim 13 wherein the passageway is a tapered passageway.

Claim 15. (original): The vortex nozzle according to claim 14 wherein the tapered passageway includes an inlet side and an outlet side.

Claim 16. (original): The vortex nozzle according to claim 15 wherein the inlet side of the tapered passageway includes a taper at an angle substantially equal to the angle of the taper of the tapered passageway.

Claim 17. (original): The vortex nozzle according to claim 14 wherein the port is tangential to the tapered passageway.

Claim 18. (original): The vortex nozzle according to claim 14 wherein the port enters the tapered passageway at an angle substantially equal to the angle of the taper of the tapered passageway.

Claim 19. (original): The vortex nozzle according to claim 15 wherein the cross-sectional area of the port is less than the cross-sectional area of the inlet side of the tapered passageway.

Claim 20. (original): The vortex nozzle according to claim 13 wherein the port is substantially trapezoidal in shape.

Claim 21. (original): The vortex nozzle according to claim 14 wherein the end cap includes an inner face having a taper at an angle substantially equal to the angle of the taper of the tapered passageway.

Claim 22. (original): The vortex nozzle according to claim 13 wherein the end cap includes a boss that extends into the passageway and is adapted to adjust force vector components of the fluid flow entering the passageway.

Claim 23. (original): The vortex nozzle according to claim 13 wherein the nozzle body is substantially cylindrical in shape and includes a shoulder having a raised portion.

Claims 24-41 (canceled)

Claim 42. (currently amended): A vortex nozzle, comprising: a nozzle body including a passageway; at least a segment of the passageway being tapered; and a port that inlets a fluid flow into the passageway, the port being substantially tangential and normal to the passageway.

Claim 43. (original): The vortex nozzle according to claim 42, wherein the port enters the tapered passageway at an angle substantially equal to the angle of the taper of the tapered passageway.

Claim 44. (original): The vortex nozzle according to claim 42, wherein the nozzle body is substantially cylindrical in shape and includes a shoulder having a raised portion.

Claims 45-48 (canceled)

### REASONS FOR ALLOWANCE

The main reason for the allowance of claims 13-23 is the instantly claimed vortex nozzle, comprising: a nozzle body including a passageway therethrough and a port that inlets a fluid flow into the passageway, whereby the port is substantially tangential and normal to the passageway; and an end cap attached to the nozzle body.

The main reason for the allowance of claims 42-44 is the instantly claimed vortex nozzle, comprising: a nozzle body including a passageway; at least a segment of the passageway being tapered; and a port that inlets a fluid flow into the passageway, the port being substantially tangential and normal to the passageway.

Furthermore, the main reason for the allowance of claims 12-23 and 42-44 is found in the applicants remarks filed July 30, 2003.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ashbrook (4,261,521) who discloses a fluid treating apparatus including a first vortex nozzle in opposed relationship to a second vortex nozzle. Ashbrook (5,435,913) who discloses a fluid treating apparatus including a first vortex nozzle in series with a second vortex nozzle in opposed relationship to third vortex nozzle in series with a fourth vortex nozzle. Hlavenka who discloses a fluid treating apparatus including a Vortex Nozzle.

***Conclusion***

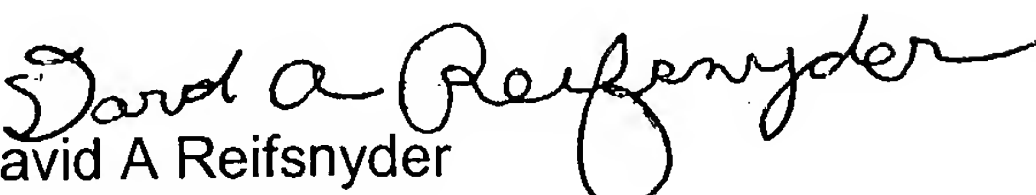
Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A Reifsnyder whose telephone number is (571) 271-1145. The examiner can normally be reached on M-F 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda M Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
David A Reifsnyder  
Primary Examiner  
Art Unit 1723

DAR